



## CLAIMS

- 5 -1- Device for managing an electrical power failure in, in particular, a yarn transformation textile machine comprising:
- means for advancing the yarns subjected to the action of motor devices controlled by frequency converters or changers (12a), (12b) supplied by a common direct current bus (17);
  - a monitoring/control system (19) supplied by the same direct current bus;
  - 10 - means for processing the yarns provided in the form of power spindles (1a), (1b), (1c) in particular being subjected to the action of individual motor devices controlled by frequency converters or changers (11a), (11b), (11c),

characterized in that:

- 15 - power spindles (1a), (1b), (1c) are not supplied by the common bus but are self-powered and autonomous;
- the power supply to common bus (17) of the set of yarn advancing elements is maintained by a flywheel (13) so that the two systems are totally electrically independent, only the value of the ramp functions of
- 20 both avoids any voltage fault.

-2- Device as claimed in claim 1, characterized in that:

- flywheel (13) is subjected to the action of a motor device (14) controlled by a frequency converter or changer (15) connected to common direct
- 25 current bus (17);
- the frequency converters or changers (11a), (11b), (11c) of the power spindles include means of autonomous stopping in the event of a general power supply failure and are capable of triggering deceleration in accordance with a pre-programmed built-in ramp function;



- means of monitoring (9) the general power supply voltage capable of forcing all said frequency converters (11a), (11b), (11c) of power spindles (12a), (12b), (12c) and the devices for advancing the yarn to switch to stop mode in the event of a circuit failure so that:
- 5       \* each frequency converter (11a), (11c), (11c) brakes the power spindle in accordance with the pre-programmed deceleration ramp function and is self-powered by the kinetic energy of said power spindle;
- 10       \* frequency converter (15) that controls motor device (14) of flywheel (13) forces deceleration that switches said motor to generator mode in order to supply the voltage level on common direct current bus (17);
- 15       \* monitoring system (19) applies a predetermined deceleration ramp function established relative to the programmed deceleration ramp function to said frequency converters in order to maintain correct speed ratios.
- 3- Device as claimed in either claim 1 or 2, characterized in that the pre-programmed ramp functions in the individual frequency converters (11a), (11b), (11c) of the spindles and the ramp function programmed in the monitoring system are determined so that, when the stop cycle is triggered simultaneously, speeds remain substantially proportional throughout the duration of the stoppage.
- 25       -4- Device as claimed in either claim 1 or 2, characterized in that the mass of flywheel (13) and its speed are determined so that said flywheel contains sufficient energy to maintain the power supply to the means for advancing the yarns throughout the duration of the stoppage.



-5- Device as claimed in claim 2, characterized in that the predetermined deceleration ramp functions are programmed in the frequency converters that control the devices for advancing the yarn.

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